PRE-ASSESSMENT SCREEN AND DETERMINATION

South Canadian River
Canadian and Grady Counties, Oklahoma

by

Department of the Interior

ACTION

This is the Pre-Assessment Screen for injuries resulting from the release of hazardous substances, specifically, ammonia contained in wastewater, released from the Braum's, Inc., Dairy Feeding Operation (Braum's) into the South Canadian River, located in Canadian and Grady Counties, Oklahoma, performed by the United States Department of the Interior (Department).

AUTHORITY

The U. S. Fish and Wildlife Service (Service) is acting on behalf of the Secretary of the Interior as a Trustee for natural resources. The Secretary is delegated natural resource trusteeship pursuant to Executive Order 12580, January 23, 1987, and the National Contingency Plan (NCP), at 40 C.F.R. § 300.600, to conduct Natural Resource Damage Assessment and Restoration (NRDAR), pursuant to the natural resource damage assessment regulations at 43 C.F.R. Part 11. The authority for the natural resource Trustee to assess damages to natural resources is pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. 9601 *et seq.*, and the Federal Water Pollution Control Act (FWPCA), as amended, 33 U.S.C. 1251 *et seq.*

PRE-ASSESSMENT SCREEN

Requirement: Federal Regulations at 43 C.F.R. 11.23(a) requires the Trustee to complete a preassessment screen and make a determination as to whether a NRDAR action shall be performed. This document fulfills that requirement and follows the structure of Federal Regulations at 43 C.F.R. Part 11.

General Criteria

1. Discharge or release

The Department reviewed relevant information, which indicates that hazardous substances have been emitted, emptied, discharged, allowed to escape, disposed, or otherwise released into the South Canadian River. The release of hazardous substances occurred resulting in detrimental impacts to wildlife habitat, human use, impairment to water quality and mortality of aquatic organisms.

2. Affected natural resources

Natural resources for which the Department may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the discharge or release, include, but are not limited to:

endangered species and their supporting habitat and migratory birds. Authority for the management or control of these resources is pursuant to the Endangered Species Act (ESA), as amended, 16 U.S.C. § 1531 *et seq.*, and the Migratory Bird Treaty Act (MBTA), as amended, 16 U.S.C. § 703 *et seq.*

Natural resources under the trusteeship of the Service include, but are not limited to, the following:

the federally-listed threatened Arkansas River shiner (ARS)(*Notropis girardi*) and its supporting habitat, and migratory birds.

3. Quantity and concentration of discharged oil or hazardous substance

Braum's reported that 5,000 gallons of effluent discharged from their facility into the South Canadian River in July 2003, as documented in the Environmental Protection Agency (EPA) Administrative Order Docket No. CWA-06-20003-2086 (EPA 2003). The Oklahoma Department of Agriculture, Food and Forestry (ODAFF) recorded concentrations of ammonia that are known to be acutely toxic to aquatic life (ODAFF 2003). These concentrations of ammonia exceed the 1999 Ambient Water Quality Criteria for Ammonia (EPA 1999), as adopted by the State of Oklahoma Water Quality Standards (State 2003).

4. Availability of data for a reasonable cost damage assessment

There are data available documenting the severity and extent of biological community degradation, mortality of ARS, and impacts to water quality downstream of the Braum's release point into the South Canadian River. Data on injury from on-going non-permitted releases of hazardous substances from Braum's can be obtained by further assessment at a reasonable cost. Additional information about effects of ammonia and other hazardous substances on fish, aquatic invertebrates, and indirect injury to terrestrial food webs are readily available through literature sources.

5. Response Actions

The initial response by Braum's was to shut off the flow from the broken pipe and notify ODAFF of the release. The damaged portion of the pipe was removed and replaced. Federal agencies that responded to the discharge event included the Service and the EPA. The agencies that responded from the State of Oklahoma included the Oklahoma Department of Wildlife Conservation (ODWC), ODAFF, and the Oklahoma Corporation Commission (OCC). The Service and ODWC collected information on the fish kill and the ODAFF collected water samples.

Information on the Site and Discharges

1. Time, quantity, duration, and frequency of discharges

The discharge occurred on July 21, 2003, from a fractured wastewater transfer pipe at Braum's facility to a storm water runoff ditch and into the South Canadian River. Braum's reported that 5,000 gallons of effluent discharged from their facility into the South Canadian River in July 2003, as documented in the EPA Administrative Order Docket No. CWA-06-20003-2086 (EPA 2003). The ODAFF recorded concentrations of ammonia that are known to be acutely toxic to aquatic life (ODAFF 2003b).

Braum's has general National Pollutant Discharge Elimination System (NPDES) permit number OKG010029 for their Concentrated Animal Feeding Operation (CAFO) from the EPA. Under that permit, Braum's is prohibited from discharging wastewater pollutants to waters of the United States. The exception to that is when rainfall events, either chronic or catastrophic, cause an overflow of process water from a facility designed, constructed, and operated to hold all process wastewater, plus the runoff from a 25-year, 24-hour rainfall event for the location of the CAFO (EPA 1998). Braum's is subject to the 1999 Ambient Water Quality Criteria for Ammonia (EPA 1999) as adopted by the State of Oklahoma Water Quality Standards (State 2003). These limits were exceeded during the July 2003 event according to the EPA finding of violation and Order of Compliance (EPA 2004).

2. Identification of the hazardous substances

Releases of hazardous substances have occurred; ammonia (CAS # 007664-41-7), was emitted, emptied, discharged, allowed to escape, disposed of, or otherwise released into the South Canadian River. Ammonia is listed as hazardous substances in the Federal Regulations found at 40 C.F.R. § 116.4A.

3. History of the site

The site is the South Canadian River bordering Grady and Canadian Counties, OK. The boundary of the site is from the unnamed drainage ditch at the Braum's property to approximately 7.9 miles downstream in the South Canadian River (see map). The 2003 discharge from the Braum's facility impacted a number of prairie river species, including the federally-listed threatened ARS and migratory birds.

The ARS was listed as a threatened species on November 23, 1998, based on reductions of the species' range and numbers due to habitat destruction and modification, stream dewatering, diversion of surface water, groundwater pumping, construction of impoundments, and water quality degradation (USFWS 1998).

The ARS was first reported in 1926 from the Cimarron River northwest of Kenton, Cimarron County, Oklahoma (Hubbs and Ortenburger 1929). Historically, the ARS was widespread and abundant throughout the western portion of the Arkansas River basin in Kansas, New Mexico, Oklahoma, and Texas, and subsequently, this species has disappeared from over 80 percent of its historical range and is now almost entirely restricted to about 508 miles of the South Canadian River in New Mexico, Oklahoma, and Texas.

Critical habitat for the ARS was designated on April 4, 2001, including the affected stretch of river. However, on April 25, 2002, the New Mexico Cattle Growers Association and 16 other plaintiffs filed complaint in the United States District Court of New Mexico alleging violation of the Administrative Procedures Act, the ESA, and the National Environmental Policy Act. Per court decision, critical habitat was vacated in September of 2003 and the Service was ordered to complete a proposed rulemaking to redesignate critical habitat by September of 2004. The proposed rule to redesignate critical habitat, including the portion of the South Canadian River affected by the July 2003 discharge for the ARS, was published in the Federal Register on October 6, 2004, and is currently available for public review.

The notice of the Braum's discharge into known habitat of the ARS in July 2003 prompted response by the Service and state agencies, including ODWC and ODAFF (ODAFF 2003a). The resulting 7.9 mile fish kill was documented and quantified during two site visits by the Service and the ODWC. The ODWC determined that approximately 171,046 were killed using approved fish kill investigation methods (ODWC 2003). Samples of expired minnows were collected and

preserved for laboratory identification from the affected portion of the South Canadian River by Service personnel. ARS were identified from the samples and it was determined that approximately 11,000 ARS were taken during the July 2003 Braum's discharge event (USFWS 2003).

4. Relevant operations occurring at or near the site

Braum's is still in operation and has not had any subsequent releases from their pipelines. However, it has been documented that animal waste was land applied on and near the South Canadian River flood zone in 2004 (USFWS 2004).

5. Additional oil or hazardous substances potentially discharged at the site

It is not known if other hazardous substances were released during the July 2003 event. However, it is known that the hazardous substance hydrogen sulfide (CAS # 007783-06-04) is produced from organic matter as animal waste is decomposed by microorganisms in anoxic environments (Kularatne et al 2003). It is suspected that other hazardous substances could have been present in discharges from the Braum's facility.

6. Potentially responsible parties:

Braum's Dairy Farm
3000 Northeast 63rd Street
Oklahoma City, OK 73121

PRELIMINARY IDENTIFICATION OF RESOURCES AT RISK

1. Preliminary identification of pathways

The illegal release of effluent (ammonia source) from a fractured wastewater transfer pipe on the Braum's facility entered an unnamed ditch and flowed directly into the South Canadian River in July 2003. The South Canadian River is habitat of the ARS and migratory birds. The effluent moved slowly downstream due to seasonal low flow conditions and contained toxic levels of ammonia that resulted in mortality of ARS in the South Canadian River. The chemical/ biological oxygen demand (CBOD) of the effluent created anoxic conditions that degraded water quality in the South Canadian River and potentially produced hydrogen sulfide.

2. Exposed areas

The waters, sediments, and biota of the South Canadian River have been contaminated and, subsequently, smothered with untreated effluent containing toxic levels of ammonia and CBOD.

3. Exposed water estimates

Approximately 7.9 miles of riverine habitat and associated components of the South Canadian River have been impacted.

4. Estimates of concentrations

The transient nature of ammonia, other hazardous substances, and the oxygen depletion in the water column during the July 2003 event were not fully quantified. However, dead ARS and reduced water quality in the South Canadian River, as demonstrated by samples taken by the

ODAFF, show that hazardous substances were present in toxic concentrations (ODAFF 2003b). This is supported by the fact that above the confluence of the unnamed ditch that flowed from Braums' property into the South Canadian River there was no injury to aquatic life or water quality.

5. Potentially affected resources

The following natural resources are potentially affected: ARS, its supporting habitat, and migratory birds. The following services to the public are potentially affected: fishing and passive values provided by waterways and a healthy ecosystem.

PRE-ASSESSMENT SCREEN DETERMINATION

Releases of hazardous substances into the South Canadian River have caused injury to natural resources under the trusteeship of the Department of the Interior, as defined by the FWPCA and the CERCLA. Therefore, the Department will conduct a natural resource damage assessment at this site, in accordance with Federal Regulations at 43 C.F.R. § 11, Subparts C and E.

Date: April 4, 2005

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Dale Hall, Regional Director
U. S. Fish and Wildlife Service
Authorized Official for the
Department of the Interior

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